



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/851,362	05/08/2001	David S. Breed	ATI-244	2373

22846 7590 08/27/2003
BRIAN ROFFE, ESQ
11 SUNRISE PLAZA, SUITE 303
VALLEY STREAM, NY 11580-6170

EXAMINER

NGUYEN, TAI T

ART UNIT PAPER NUMBER

2632

DATE MAILED: 08/27/2003

8

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/851,362

Applicant(s)

BREED ET AL.

Examiner

Tai T. Nguyen

Art Unit

2632

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 21 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6,8-20 and 22-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6,8-20 and 22-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 8-18 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scully (US 6,363,326) in view of Uehara (US 5,808,728).

Regarding claim 1, Scully discloses an apparatus (figure 1) for obtaining information about object (80) in an environment around a vehicle including all subject matters as follows:

light emitting means (10, as shown in Figure 1; col. 2, lines 23-44);
receiver means (20; as shown in Figure 1; col. 2, lines 23-44); and
measurement means (40, 50) coupled to the light emitting means and the receiver means for measuring time between emission of the infrared and reception of the infrared whereby the measured time correlates to distance between the vehicle and an object from which the infrared light is reflected (as shown in Figure 1; col. 2, lines 44-62); and

a processor (100) coupled to the receiver means for providing an indication in display (300) indicating that the object (80) is within the sensing volume (col. 2, lines 28-62).

Scully discloses the instant claimed invention except for: the processor being structured and arranged to determine an identification of the object which light is reflected based at least in part on the received infrared light. Uehara teaches a vehicle environment monitoring system comprising a monitor unit (4) having an object identification means (13) for detecting the configuration and position of an obstacle on the basis of distance information and direction information obtained from an optical radar unit (9) and identifies the obstacle (figure 24; col. 16, line 36 through col. 17, line 30). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to utilize the object identification means as taught by Uehara into the system as disclosed by Scully for the purpose of providing an indication/alerting to a driver of the vehicle to the presence of the identified obstacle.

Regarding claim 2, Scully discloses the light emitting means is an infrared laser diode (col. 2, lines 63-64). (60-65)

Regarding claim 3, Scully discloses the light emitting means (10) is a pulse laser/transmitter (col. 2, lines 22-25).

Regarding claim 4, Scully discloses the light emitting means is a continuous laser beam directing infrared light to scan in a line and control unit (100) for controlling the scanning laser beam of infrared light such that the infrared light transverses a volume of space near the vehicle (col. 2, lines 28-33 and col. 3, lines 29-49 and col. 4, lines 63-65).

Regarding claims 8-12, Since Scully discloses the control unit (100) is a conventional microprocessor, microcontroller, or a digital signal processor for setting the

firing sequence of the individual units, storing data from the rangefinder units, providing system analysis and providing output for display of status in a display unit (300, col. 2, lines 28-33). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to know that the control unit can be used to utilizes pattern recognition techniques, modular neural network to identify the object from reflected signal to determine the distance between object and vehicle.

Regarding claim 13, Scully discloses the light emitting means (10) and the receiver means (20) are collocated in the same rangefinder (200, as shown in Figure 1).

Regarding claim 14, Scully discloses the operation of the system can be used of a single receiver means with a multiple light emitting units (col. 5, lines 4-6).

Regarding claim 15, as shown in Figure 1, wherein the light emitting unit and the receiver means are spaced apart from one other.

Regarding claim 16, since Scully discloses the receiver unit detects reflected return pulse from an obstacle (80) and provides initial amplified and gain adjusted in signal conditional (30, as shown in Figure 1; col. 2, lines 34-44). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use a notch filter for filtering noise in order to avoid the false alarm situation when there is no object is detected.

Regarding claim 17, Scully fails to disclose the receiver means comprises a light valve but it would have been obvious to a person having ordinary skill in the art at the time the invention was made to utilize a receiver light valve in order to limit a light intensity that may overwhelming the receiver.

Regarding claim 18, as mentioned in claim 4 above, Scully discloses the control unit (100) comprising a processor coupled to the measurement means for determining distance between the vehicle and the object (80) from which infrared light is reflected and velocity of the object based on a plurality of position measurement (col. 3, line 62 through col. 4, line 59).

Regarding claim 30, as mentioned in claim 1 above, Uehara teaches the object identification means (13) for detecting the configuration and position of an obstacle on the basis of distance information and direction information obtained from an optical radar unit (9) and identifies the obstacle (figure 24; col. 16, line 36 through col. 17, line 30) and Uehara further teaches a distance measuring means for detecting the distance between the vehicular and the object based upon the time elapsed from the light sending time of the light transmitter. Uehara discloses the instant claimed invention except for: the receiver being arranged to form at least one image of the environment around the vehicle. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to know that the image of the detected object can be formed based upon the light reflected receiving by the receiver in order to provide indication of the object image to the operator.

Claim Rejections - 35 USC § 103

3. Claims 19-20, 22-23, 25-29, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scully in view of Uehara as applied to claim 1 above, and further in view of Spies (US 5,247,296).

Regarding claim 19, Scully discloses a system for detecting an object on a side of a vehicle including all subject matters as follows:

an arrangement (200) for obtaining information about the object (80), the arrangement comprising:

light emitting means (10, as shown in Figure 1; col. 2, lines 23-44);

receiver means (20) being arranged to obtain at least one image of the environment around the vehicle (figure 1; col. 2, lines 23-44);

a vehicular system (figure 1) adapted to be controlled the determination of the presence of the object in an environment of the vehicle (as shown in Figures 1 and 3); and

processor (100) coupled to the arrangement and the vehicular system for obtaining information about the object (as shown in Figure 1; col. 3, lines 28-33).

Scully discloses the instant claimed invention except for: the processor being structured and arranged to determined an identification of the object which light is reflected based at least in part on the received infrared light. Uehara teaches a vehicle environment monitoring system comprising a monitor unit (4) having an object identification means (13) for detecting the configuration and position of an obstacle on the basic of distance information and direction information obtained from an optical

radar unit (9) and identifies the obstacle (figure 24; col. 16, line 36 through col. 17, line 30).

Scully discloses the instant claimed invention except for: the processor being coupled to the vehicular system and arranged to control the vehicular system based at least in part on the determined identification of the object. Spies teaches a device for determination of distance between close-range objects including an optical transmitter (3) and an optical receiver (2) for transmitting and receiving a light pulse signal, wherein the signal is processing by a microprocessor (28) of an evaluation unit (11) to determine a distance between the transmitter and an object, when the object is in a certain distance, the evaluation unit generates an output signal to control the vehicular system (figures 2-3; col. 2, lines 4-21).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to utilize the object identification means as taught by Uehara and the vehicular controlling as taught by Spies into the system as disclosed by Scully, as modified, for the purpose of providing an indication/alerting to a driver of the vehicle to the presence of the identified obstacle and controlling the vehicular system to avoid collision that may happened in order to protected the vehicle's occupants.

Regarding claim 20, Scully disclose the processor is arranged for measuring time between emission of the infrared and reception of the infrared whereby the measured time correlates to distance between the vehicle and an object from which the infrared light is reflected (as shown in Figure 1; col. 2, lines 44-62).

Regarding claims 22-23, 25-27 and 29, refer to claims 8-12 above.

Regarding claim 28, since Scully discloses the vehicular system (as shown in Figure 3), it would have been obvious to a person having ordinary skill in the art at the time the invention was made to

Regarding claim 31, refer to claim 30 above.

1. Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scully and Uehara as applied to claim 1 above, and further in view of Smith et al. (US 6,281,806).

Regarding claims 5-6, Scully disclose the instant claimed invention except for: the receiver means comprises a single pixel camera, CCD array, a CMOS array. Since Scully disclose receiver means (10) is a photodiode or avalanche photodiode (col. 3, lines 13-16). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to utilize a single pixel camera, CCD array, a CMOS array to receive a reflected signal from the object to determine the distance and location of that object. Smith et al. teaches a sensor system (18) for outputting a plurality signals (22) including pixel data and obtaining reflected signals back by a CMOS or CCD camera as shown in Figure 1; col. 3, lines 14-46). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use the CMOS or CCD cameras as taught by Smith et al. into the system as disclose by Scully for receiving the infrared light reflecting back from the environment around the vehicle in order to detect the distance between the object and the vehicle.

2. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Scully in view of Uehara and Spies as applied to claim 19 above, and further in view of Smith et al. (US 6,281,806).

Regarding claim 24, refer to claims 5-6 above.

Response to Arguments

3. Applicant's arguments with respect to claims 1-6, 8-20, and 22-29 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Art Unit: 2632

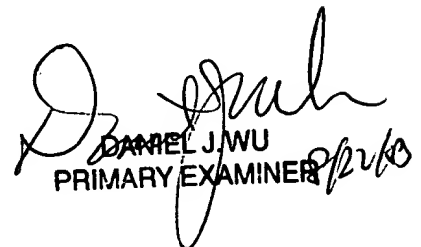
5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tai T. Nguyen whose telephone number is (703) 308-0160. The examiner can normally be reached on Monday-Friday from 7:30am-5:00pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's acting supervisor, Daniel J. Wu, can be reached at (703) 308-6730. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3988 for regular communications and (703) 305-3988 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

August 21, 2003

Tai T. Nguyen
Examiner
Art Unit 2632


DANIEL J. WU
PRIMARY EXAMINER